(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 January 2001 (04.01.2001)

PCT

(10) International Publication Number
WO 01/00242 A2

(51) International Patent Classification[7]: A61K 47/48

(21) International Application Number: PCT/HU00/00061

(22) International Filing Date: 28 June 2000 (28.06.2000)

(25) Filing Language: Hungarian

(26) Publication Language: English

(30) Priority Data:
P 9902217 29 June 1999 (29.06.1999) HU

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(81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *Without international search report and to be republished upon receipt of that report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PREPARING POLYCATION BASED BIOCONJUGATES SUITABLE FOR TRANSPORTING DIFFERENT KINDS OF ACTIVE SUBSTANCES WITHIN THE BODY

$$\begin{array}{c} H[HN\text{-}CH_2\text{-}(CH_2)_m\text{-}\underset{|}{CH}\text{-}CO]_rOH \\ [(i)Mx] \cdot [(k)Mx] - NH \end{array} \qquad (I)$$

(57) Abstract: The invention relates to new polycation bioconjugates and to a method for producing them. New polycation bioconjugates according to the invention are characterized by that the comprised polycations are capable of transporting active substances of different types in the mammal organism, i.e. for functioning as carrier molecules, thus are able to enhance the biological effectiveness of the transported molecules, and consequently they can, for example, favourably inhibit malignant cell proliferation, or they possess antimicrobial effect, or are suitable for transportation of genes. A further characteristic of the polycation bioconjugates according to the invention is that each of them contains isopolypeptide carrier molecules, bearing free α-amino group, as a common characteristic structural element. Enhancer molecules - same or different - having appropriate binding functions are coupled by chemical bonds directly and/or indirectly through connecting molecules - that may be identical or different ones - to the carrier molecule. Hence the polycation bioconjugates synthetized according to the invention are of general formula (I) wherein: "r" is a mean value between 20 and 400, "m"=0, 1, 2, 3, ...k, "[(k)Mx]" designates enhancer molecules and/or connecting molecules conjugated by covalent (=k) bonds to the isopolypeptide polycation carrier molecule, and "[(i)Mx]" designates enhancer molecules conjugated by ionic (=i) bonds to the isopolypeptide polycation carrier molecule, whereas the said enhancer molecules and connecting molecules having appropriate functional groups for conjugation may either be identical ones or of (two or more i.e "x") different kinds, and the enhancer molecules can be conjugated directly and/or indirectly through a connecting molecule.

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